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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/632,576	07/28/2003	John LeRoy Parker JR.	8245.057	5022

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EXAMINER

LAM, CATHY FONG FONG

ART UNIT	PAPER NUMBER
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1775

DATE MAILED: 10/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/632,576

Applicant(s)

PARKER ET AL.

Examiner

Cathy Lam

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 25 July 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 46-60 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 46-60 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

In view of the amendment and remarks filed on July 25<sup>th</sup> 2005, the pending claims are unpatentable as following:

***Claim Rejections - 35 USC § 112***

1. Claim 50 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The phrase "a blind via extending through at least one of said strata" is confusing, because there could be one strata (in the preamble), and if the via extending through the strata, then the via hole would not be a "blind via".

***Claim Rejections - 35 USC § 102***

2. Claims 50-52 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Otani et al (US 5277787).

It is noted by the Examiner that some claims involved product by process limitations. It is the product itself which must be new and unobvious. Unless some unexpected result is shown that occurs due to Applicant's specific process(es), different processing steps are not patentably distinguishing for claims to an article.

Otani discloses a printed wiring board comprised of an insulating base (3), two copper foils (2), via holes (4), conductive ink (5) and copper plate layer (6).

The via holes (4) extend through the thickness of the insulating base (3), the conductive ink is filled into the via holes (4) (col 2 L 27-28). Two copper foils (2) having thickness of 18 :m (or. 0.7 mil) is formed onto both surfaces of the insulating base (3) (col 2 L 20-24). The via holes (4) formed in the insulating base can be used as outer

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layers of a multilayer printed wiring board (Fig. 3). The examiner takes the position that such via holes in the outer layers resemble blind via holes in the multilayer wiring board.

Two copper plate layers (6) are formed over the surfaces of the copper foil plated insulating base and the conductive ink filled via holes (col 2 L 32-36).

A circuit pattern for providing a mounting land can be achieved by using dry film and by etching (col 2 L 37-43).

***Claim Rejections - 35 USC § 103***

3. Claims 46-49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishikawa et al (US 5243142) in view of Hayakawa et al (US 4383363).

Ishikawa discloses a double-sided printed wiring board comprised of an insulating substrate (1), via hole, non-conductive paste (5) and conductive foils (6).

The via hole is formed in the thickness direction of the insulating substrate (1) and the paste is formed into the via hole. Two copper foils (6) are formed onto the surfaces of the insulating substrate (1) and covering the non-conductive paste filled via hole (col 3 L 52-57). The copper foils (6) have a thickness of 15  $\mu\text{m}$  (ie. 0.59 mil) and are then etched to form a desired pattern (col 4 L 62-65).

Hayakawa discloses a wiring board with through holes. Conductive paste is filled into the through holes for electrically connecting the conductive layers formed on both surfaces of the wiring board (col 2 L 36-41).

Ishikawa's via holes are filled with non-conductive paste, however filling via holes with electrical conductive paste or ink is well known in printed wiring board art.

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Since there is no clear showing of blind via holes in any of the Figures, the examiner takes the position that the via hole is "closed" by the copper foils (6) to form a blind via hole.

4. Claims 53-60 are rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe et al (US 5319159) in view of Hayakawa et al (US 4383363).

Watanabe discloses a printed wiring board comprised of an insulating base layer (1), via holes, two copper plating layers (10 & 11).

Via holes are formed in the thickness direction of the insulating base layer (1). A flowable resin material (1) is filled into the via holes (col 4 L 10-20).

Two copper layers (10&11) are firstly and secondly plated onto the same surface of the insulating base layer (1) and covering the filled via holes (col 4 L 24-32). The copper plated area is then etched to form a desired conductive pattern or land (col 4 L 38-41).

Watanabe does not teach the resin material (9) filled into the via holes is a conductive paste or a conductive ink.

Hayakawa teach a printed wiring board having via holes formed in the thickness direction of an insulating layer. The via holes are filled with a conductive paste or a conductive ink.

In Hayakawa, the conductive paste is a silver paste or a solder paste (col 4 L 12-14).

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In view of the prior art teachings, it would have been obvious to use a conductive paste that contains copper, silver or noble metals, to fill into the via holes because such materials are conventional and easily be managed.

### ***Double Patenting***

5. Claims 50-60 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 5-18 are of U.S. Patent No. **6,303,881**. Although the conflicting claims are not identical, they are not patentably distinct from each other because they are structurally and materially the same.

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

### ***Drawings***

6. The drawings are objected to under 37 CFR 1.83(a) because they fail to show blind via in the insulating substrate as described in the specification. The via holes shown in the figure 1 are through holes. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required

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in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Response to Arguments***

Applicant's arguments filed July 25, 2005 have been fully considered but they are not persuasive. In the paper filed on July 25, 2005 Applicant amended the claims and filed a Terminal disclaimer.

Applicant's invention is directed to a wiring board having blind via holes. The submitted Figures however have no clear showing of what the presently claimed blind via hole looks like. Applicant submitted a paper (Title: Buried/blind vias) which defines the different types of via holes. In view of Figure 1 of the present invention, the via

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holes are all shown as normal through holes NOT blind via holes. Furthermore, the claims are unclear and inconsistent with the Figures.

The Terminal Disclaimer filed on July 25 2005, applicant disclaimed the present invention over USPN 6,598,291 which is not the Obviousness double patenting was rejected upon. **The ODP was rejected over USPN 6,303,881.** A correct TD is required to overcome the ODP rejection.

### ***Conclusion***

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cathy Lam whose telephone number is (571) 272-1538. The examiner can normally be reached on 9am-6pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah Jones can be reached on (571) 272-1535. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Cathy Lam  
Primary Examiner  
Art Unit 1775

cfl  
October 13, 2005